

ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY
INTERVIEW WITH
JULIUS KRUG

BY - CHARLES W. CRAWFORD
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INTERVIEW WITH JULIUS KRUG

SEPTEMBER 24, 1969

BY CHARLES W. CRAWFORD

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PLACE Knoxville, Tenn.

DATE September 24, 1969.

J. A. Krug
(Interviewee)

Charles W. Crawford
(For the Mississippi Valley Archives
of the John Willard Brister Library
of Memphis State University)

THIS IS MEMPHIS STATE UNIVERSITY ORAL HISTORY RESEARCH OFFICE PROJECT,
AN ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY. THE DATE IS
SEPTEMBER 24, 1969. THE PLACE IS KNOXVILLE, TENNESSEE AT THE HOME OF
MR. JULIUS KRUG, FORMERLY WITH TVA, PRESENTLY RETIRED. THE INTERVIEWER
IS DR. CHARLES W. CRAWFORD OF MEMPHIS STATE UNIVERSITY.

DR. CRAWFORD: Mr. Krug, I suggest we start by getting a little background about
your early life, your education, and your decision to go into the career that
you did. I believe you were born in 1907 at Madison, Wisconsin.

MR. KRUG: That's right, sir.

DR. CRAWFORD: Can you tell something about your early background and education?

MR. KRUG: Before we get into these questions I would like to correct one thing.
I'm retired from TVA, but I'm not retired otherwise. I'm President of
Volunteer Asphalt Company and Volunteer Petroleum Company here in Knoxville
and Chairman of the Board of Brookside Mills, also in Knoxville.

DR. CRAWFORD: Do you also have business in Washington, Mr. Krug?

MR. KRUG: Yes, as a consulting engineer in Washington and many places.

DR. CRAWFORD: What about your early experiences in education, Mr. Krug?

MR. KRUG: Well, as you said, I was born in Madison, went through the local
school system there, and entered the University of Wisconsin in 1925. I
started out as an engineer, but shifted to business management and finally
won my B. A. in 1929. I decided that I hadn't learned too much, so I went
back for an additional year and took an M. A., specializing in public utility
management and economics. I finally won my M. A. in 1930.

At that time I entered the employ of the American Tel. and Tel.
Company system with the Wisconsin Telephone Company in Milwaukee. I special-
ized in statistics in business research. At that time they had some fancy
ways to project business conditions and all, and that was my field.

Memphis State University
Memphis, Tennessee

MR. KRUG: I enjoyed it, and I think that I learned quite a bit. But in the (Cont'd.) fall of 1931, David Lilienthal was named by Governor La Follette as his Chairman of the Wisconsin Public Service Commission. I was offered a job as research assistant with the commission, which I accepted and returned to Madison and spent four delightful years working with Mr. Lilienthal. At the end of that period I was selected by the Federal Communications Commission as (how they got this I don't know,) but the title was Public Utility Expert. I went to work in New York City on the investigation which had been authorized by the Congress on the A. T. & T. system, and I specialized in their long-distance rates. I don't deserve more than a fraction of the credit. I think that is the first time that the federal government through a federal agency ever got a big giant to reduce rates involuntarily. They were wise enough to reduce them several times on their own, because in economics it's obvious that the lower the rate, the more the calls. The same thing we learned down here in TVA.

DR. CRAWFORD: What year was that, sir? When were you in New York?

MR. KRUG: That was in 1935 and part of '36.

DR. CRAWFORD: How was your business experience in 1930? Did you enjoy working for the telephone company in Wisconsin?

MR. KRUG: I did very much. I was very happy, but my immediate boss was very unhappy. He contracted an eye difficulty, so he had to temporarily retire. I was the only man in that department with any training, and I took his job while the poor fellow was incapacitated. So I did all the work of the statistical department--projecting these curves of business and what-not and the correlation between various trends like unemployment and even coin-box sales with the future business of the company. I think that I learned in

MR. KRUG: that one year in Milwaukee with the Wisconsin Telephone Company ' (Cont'd.)

more than I had learned the previous five years in school.

DR. CRAWFORD: Did you feel that it was a disadvantage, going into business during the depression?

MR. KRUG: Yes, it was tough in terms of salary, but not otherwise.

DR. CRAWFORD: Why did you decide to leave private business and go into public service?

MR. KRUG: Well, primarily because when Dave Lilienthal took over the Wisconsin Commission he promised a whole reform in the way public services were supervised by the state government. I thought that was a real opportunity. I think that Wisconsin was about the only state that even made a step forward at that time. New York and California were not far behind. I did not know Mr. Lilienthal before that, but I thought that with his background he meant what he was talking about, and he did.

DR. CRAWFORD: Wisconsin had quite a progressive tradition, didn't it?

MR. KRUG: Yes, at that time.

DR. CRAWFORD: When did you leave Mr. Lilienthal?

MR. KRUG: I left the Wisconsin Commission at the end of 1934, when I, as I said, took this job with the Federal Communications in New York. I stayed there for one year, and then another fortunate situation came along. As it turned out to be, I was sent to Frankfort, Kentucky by the Federal government to help the newly formed Kentucky Public Service Commission get on its feet. I went down, presumably, for two or three days or a week. They had nothing except a lot of good people trying to do something that they had never done before. During that period, Governor Chandler, who was then governor of Kentucky, offered me the job of running the commission. They had three able

MR. KRUG: commissioners without any particular background, but who were
(Cont'd.) honest and able. One was an ex-senator and governor, Beckham; another was a federal judge, and the third was a great man at the University of Kentucky. They would just give me a complete hand if I would come and work for the commission, which I decided to do.

I saw them through that year. I believe it was 1937, and during that period I had visits from Professor Martin Glaser. I don't know if you have encountered him in your travels so far, but he was one of the early pioneers in TVA and you should talk to him if you have not.

DR. CRAWFORD: Do you know where he is now, sir?

MR. KRUG: I'm not sure he's still alive, but the last I heard he was living in Madison, Wisconsin. He is probably retired by now. He was a professor at Wisconsin, and a very, very able guy. He had been on loan down at TVA to help them to get their power operations underway. He came to see me in Frankfort and later Mr. Lilienthal came and talked to me about the prospects of my coming down here and taking part in this development.

DR. CRAWFORD: Did you accomplish the things you wanted to in your service in Kentucky?

MR. KRUG: Well, not everything, because I was only there for one year. But I think it was the first time in the history of Kentucky that we got every major power company to cut its power rates and the telephone company to substantially reduce their rates. We did this with a very small staff, which made me quite happy. I think that since that time they have developed a more complete organization. When I was there, with the help of an accountant and an engineer or so and a lawyer, we were the entire commission. We just went

MR. KRUG: after these companies one after the other, and except in one case, (Cont'd.)

without litigation, got them to adjust their rates downward to some degree based on this TVA area. It was in their interest to cut the rates.

DR. CRAWFORD: Did you draw on your former experience in Wisconsin, also?

MR. KRUG: Oh, yes. One thing that I did learn in my four years with the Wisconsin Commission was the whole technology of rate-making and promotional rate scales. I used that in reforming the rates of the Kentucky utilities. They found, and finally agreed with me after a bitter dose of experience that it worked. That if you got the rate low enough you could get people to use a lot more power. That basic form is what I put into effect there. I not only learned that in Wisconsin, but also from what I had been keeping up to date with in TVA. If you can buy power for your home for one cent a kilowatt hour, you are going to use a lot more than if it were five cents a kilowatt hour.

DR. CRAWFORD: Did the companies accept this view generally?

MR. KRUG: Yes, we found that it worked out. The only one that caused litigation later on on its own found that this worked out and dropped the litigation and adopted that kind of rate schedule.

DR. CRAWFORD: Had you been keeping up during that time with progress in TVA?

MR. KRUG: Oh, yes. I had several friends in TVA. I told you about Professor Glaser and a schoolmate of mine who was also down here in a high position in power, Walton Seymour. By the way, he works for the Lilienthal outfit in New York, and you ought to see him if you get time in your travels, because he was with TVA before I got there and knows this part of the background better than I do.

DR. CRAWFORD: Fine. I'll be very glad to talk with him. Had you met Mr. Lilienthal when you were in Wisconsin?

MR. KRUG: Oh, yes. I worked with him closely when he was Chairman of the Commission. I was not, by any means, a big-shot in the commission. I was one of the research analysts. We studied reports of the companies and how much they were earning and how much they cut their rates and still earned enough to attract capital and all of that sort of thing. But he was very close to the staff.

DR. CRAWFORD: He was probably very young then, too.

MR. KRUG: He was very young.

DR. CRAWFORD: And what year did you leave Kentucky and join TVA?

MR. KRUG: It was the beginning of 1938. And I was happy with the public good will of the Kentucky Utility Commissioners, who were nice enough to make several trips down here with me and study it over and take my point of view that the prospects of my doing something good for the country might be bigger here than back running a commission in Frankfort, Kentucky.

DR. CRAWFORD: What was your title and what were your duties when you arrived?

MR. KRUG: When I arrived I was given the title of Chief Power Planning Engineer. This is interesting in this respect if I can divert for a moment. I arrived after agreeing to consider this job on a Monday morning on the railroad from Lexington. This Monday morning, like the Monday of this week, it was drizzling half soot and half rain. I got off the train. It was still dark at about 5:30 in the morning. I couldn't get a cab or anything. I finally walked from the station over to the Farragut. I thought, "Oh, my God, how can anybody live and work in this town?" I found that they didn't have room for me until later when someone checked out. My date with Mr. Lilienthal was for nine o'clock. So they gave me a place to clean up and shave, and I went out. It was still this miserable drizzle. I went down to a drugstore on the corner there and got some breakfast. All during this time I was building

MR. KRUG: up a definite opinion that I would not work with TVA. Any outfit (Cont'd.) that would pick a place like this for headquarters was just out. So I finally got to the meeting at nine o'clock, and I told Lilienthal that I was sorry that I had caused TVA this expense and him the inconvenience, but the job was out. If you'll let him, he can be a pretty persuasive guy. He said, "Oh, now, wait a minute. Before you do that, why don't you consider taking a look around at what we're doing down here?" I said, "What, in this rain?" "Maybe it will clear up by noon, and we have an airplane out at the airport and I will have a couple of our men show you around and what TVA is doing. Not just in the power, but in other things. If you can spend a week here and let us take you around and show you, then you can decide how to accept your judgment."

So, he was right. It cleared up about eleven o'clock and we took off in this old, single-engine Blanka that TVA owned in those days. We flew down over Chickamauga Dam, which was under construction then, and down to Muscle Shoals and stopped and saw the fertilizer works, and then on over to Memphis to see the prospects of that tremendous metropolis that was not served by TVA, but one that TVA contracted, then back through Nashville and over the countryside. I was impressed by a number of things; I think first by the people that I met working with TVA.

DR. CRAWFORD: What impressed you about the type of the employees that you did meet?

MR. KRUG: They were guys that were certain. They were doing a real job. They were not just working for a salary, but were accomplishing something. I'm referring particularly to the men that were building the dams and the men at Muscle Shoals that were developing fertilizer. Another thing that impressed me was the job already underway in checking erosion of the land.

MR. KRUG: Because in flying over it, I saw just vast areas that were in enormous (Cont'd.) erosion. In fact, the whole countryside was washing down into the Tennessee River. Then we saw smaller areas that were immaculate with the type of cultivation that the TVA people had worked out with the state and I guess with the Department of Agriculture.

DR. CRAWFORD: Where did you see the worst erosion?

MR. KRUG: Well, I saw it mixed in between the others. But, oh, for example, the area near Copperhill and the area around Chattanooga, the areas on the steeper slopes below Chattanooga toward the Tennessee. As a matter of fact, even the more level areas, as I look at them now, had horrible erosion. The soil was of such a nature that if you don't check the water running right down the hill, the soil is going to go with the water.

DR. CRAWFORD: I suppose you saw North Alabama and North Mississippi also, didn't you?

MR. KRUG: Oh, yes, of course, when you get into North Mississippi it's flatter, but the soil is more or less the same. So if you have heavy rains a part of the top soil is going to go off with the water. So I came back to Knoxville and I said, "Mr. Lilienthal, I'm taking the job."

DR. CRAWFORD: How long had you taken on your tour?

MR. KRUG: About a week.

DR. CRAWFORD: Did you feel that you had a thorough view of the scope of TVA operations?

MR. KRUG: No, I knew they were of far more expanse than I could see in that period of time, but while I was flying and looking I had a tremendous number of evaluation reports there on this and that, particularly on new projects. We had a chance to evaluate, and I could see that what they had really done was just scratching the earth--that the real thing they could do was in the future.

DR. CRAWFORD: Then you did not accept the job because of the location? Why did you accept it? The challenge, the opportunity?

MR. KRUG: Yes, the chance to be in the TVA development of a region in all of its resources as a region, and with enough authority and enough intelligence and enough management to see it through. My experience before that had not been too comprehensive, but I have known various government agencies getting in the same pie and all lapping it up, rather than making it. TVA seemed to me to be projecting a program to outline resource development as a whole-- the water, the power, flood control, navigation, recreation, and the farm areas for farming without danger of losing their fertility, and the forced possibilities of being exploited to cultivate them and a good stand of timber rather than to have them dissipate into nothing.

DR. CRAWFORD: Did you feel that in the years from 1933 until '38, that TVA had made an effective beginning?

MR. KRUG: Yes, I feel that way. I think that TVA had the same growth pains as any big enterprise. They had to find and train staffs for entirely new jobs. If you're running a big electric utility, for example, and you need help, you can look anyplace and find it, because there are all kinds of big utilities with competent help. But there weren't people at that time who had the vision to see the relationship between power and irrigation and flood control and navigation, and soil-fertility and soil-fertilization. They just weren't around. And then like Gordon Clapp, for example. . . .

DR. CRAWFORD: Was he the Director of Personnel at that time?

MR. KRUG: Yes, and present Chairman, Fred Waggoner. They didn't come here with knowledge of that. They came here with the zest to get it, and they did.

DR. CRAWFORD: Did you feel that TVA was more effective than the average government agency?

MR. KRUG: Not at that time, but I thought they were going in the right direction and they had the potential for being so. TVA lacked one of the basic things that any new organization lacks, and that is organization itself. They did not have carefully work out the inter-relationship between the various departments and who was to do what, and who controlled a decision. This affected all of them.

DR. CRAWFORD: Do you feel that it would have been better if the TVA Act had been more explicit?

MR. KRUG: I rather doubt it. I studied that to some degree, and I know that there are all kinds of pros and cons. But I really think that the broader the Act was the broader it was interpreted, the better everything turned out to be.

DR. CRAWFORD: Do you believe that was an opportunity to develop it according to the needs?

MR. KRUG: Yes, and then to explain to Congress where the law needed modification--what was needed, rather than to work in a very tight harness where somebody had written the rules, or made the harness, before they knew the problems.

DR. CRAWFORD: Who were the three directors when you arrived?

MR. KRUG: Arthur Morgan, Harcourt Morgan, and David Lilienthal.

DR. CRAWFORD: How long after that did Arthur Morgan remain?

MR. KRUG: I'm not sure exactly, but the difficulties between Arthur Morgan and David Lilienthal were apparent when they arrived. Just when the final blow-up came, I'm not quite certain. After all, it was thirty years ago.

- MR. KRUG: But I think that within a year, the President had it out with David (Cont'd.) Lilienthal and Dr. Morgan. Then Dr. Arthur Morgan departed. That was a strain on the management, because they knew of the split among the directors and it affected to some degree their willingness to make decisions if they didn't know that they weren't getting into this split in the management policy.
- DR. CRAWFORD: Do you feel that the policy of dividing responsibility among the three directors, power, agriculture, and flood control, was a wise one?
- MR. KRUG: Yes, I'm not sure how closely that was held, but in a general way, after all, we were in tremendous areas of operation. I think to have one of the three spend his time in the area where he was most specialized contributed to the improvement of the management. For example, in my case, if Dr. Arthur Morgan had anything to do with my being appointed Chief Power Planning Engineer, I never would have been appointed, I'm afraid. That might have been a good thing.
- DR. CRAWFORD: Who were the other major officers at the time you arrived, Mr. Krug?
- MR. KRUG: John Blandford, as I recall it, was General Manager.
- DR. CRAWFORD: Do you know when his title changed from Co-ordinator to General Manager?
- MR. KRUG: No, I don't recall that. I think after I arrived, but I wouldn't be sure.
- DR. CRAWFORD: Was Gordon Clapp still personnel manager?
- MR. KRUG: He was Chief of Personnel, as I recall.
- DR. CRAWFORD: Who were the other major officers at the time?
- MR. KRUG: Parker was Chief Engineer in the power operations. I took the place of Martin Glaser, who went back to Wisconsin when I agreed to come down. There is a gentleman named Llewellyn Evans. I think he still lives in Knoxville. I'm not sure. He might live in Chattanooga now.

DR. CRAWFORD: I believe he is on our interview list.

MR. KRUG: . . .who is a fine old gentleman and who is more or less the chief advisor and the planning end with Glaser, and a man named Sullivan who was in charge of power operations, which was headquartered in Chattanooga. The planning part of power was in Knoxville, and the operating part was in Chattanooga.

DR. CRAWFORD: Who were your major employees? On what people did you rely most when you came to TVA?

MR. KRUG: Well, one of the things I did (and this is just one of the things that I did) when I first came was to reorganize the entire power operation, because I could see the split between Knoxville and Chattanooga just wasn't working. The operating people considered themselves in a completely different school from the planning people. I decided to research the entire staff of TVA, regardless of where they were to get the best crew I could for power overall without this division between Knoxville and Chattanooga--without the division between planning and organization.

DR. CRAWFORD: Why did you feel that that division between Knoxville and Chattanooga was not a good policy?

MR. KRUG: Well, that sort of thing never works, I have found. But in a division where you split operations from policy and planning you're in for certain trouble, because the operators, the fellows there, had the responsibility for getting the power to the customer. They can't understand that somebody who doesn't know that part of the operation could tell them what customer to serve and when and how much. And so I started to cure that. The Board helped me in that by making me Chief Power Engineer, so that I had the whole thing rather than just the planning part under my direction. I had by that time pretty well explored the people who would make a good integrated set-up.

MR. KRUG: And they did. This chap, Walton Seymour, whom I told you about,
(Cont'd.)

he was made responsible for sales. A fellow named Ned Muir was an engineer who knew the engineering problems of serving customers. So a salesman was not just selling Tupelo, Mississippi, but an engineer would tell him what the problem would be to supply Tupelo. I picked a man named Carr who had been with the Authority for a short time. He had been with one of the power companies over in North Carolina. I think the Duke Power Company. He headed up the operations, as such, of the power plants. I picked a man named Woodruff to be the engineer of power plants and transmission lines. He was at that time well along in age, so I found for his help an assistant named Hathgood, who was assistant in that area. There was a young man at that time still with TVA named James Watson who was also in engineering, and a good salesman. So I brought him into that set-up as assistant to Walton Seymour. He now has the job that Seymour used to have. But this group that we put together was really an awfully good group of young men, except for Mr. Woodruff there. They were all very young men.

I got Lawrence Fly who was then General Counsel, to give me two of the best lawyers who I picked out in his department exclusively for power.

DR. CRAWFORD: Who were they, sir?

MR. KRUG: Joe Swidler was the principal one who later became a General Counselor of TVA and later Chairman of the Federal Power Commission. But we got together a group that could operate.

DR. CRAWFORD: Who was the other lawyer?

MR. KRUG: I'm trying to think of his name. Robert Seaks. He is now a lawyer in Washington. I think Swidler is also in Washington.

DR. CRAWFORD: I believe he is, sir. I'm to interview him this fall, I think.

MR. KRUG: That was the number one thing that we put together in organization. Number two, the power operations in TVA in terms of planning were completely up in the air. No definition had been made as to what area TVA could serve and how it could serve best in terms of power plants and transmission lines. So I took on that as my second coincidental job, I think, and we tried among the people I'm talking about to map out about what area we could feasibly serve. Not only then, but for a reasonable time in the future. We all realized that the growth of power would require more hydro-electric power and a combination of steam, and a combination of steam and hydro would produce the most economic results. So we defined an area without actually pinning it down to counties and what-not, of what we thought we could serve. We didn't turn anybody down. If they didn't fall within that area, we didn't encourage them on the grounds that they were so far away that service could be hard, and future supply difficulties and so on.

The third thing, and I think most important of all, was that TVA was in a deadlock with the private power companies in this area. They had not made any progress with any of them to get them to sell out so that there would not be a competitive system.

DR. CRAWFORD: Was the Eighteen Power Companies case completed when you arrived?

MR. KRUG: No, it was underway. So I concentrated on seeing if we couldn't find some basis of understanding with at least the big ones where they would get out and we would give them a decent price, and we would stop the warfare. Unfortunately that couldn't be done until the end of the Eighteen Companies case, but we made slight headway, I think, before the end. We got National Power and Light to sell out to the TVA and the system and the city of Knoxville.

MR. KRUG: At that time David Lilienthal was active in negotiations for TVA.
(Cont'd.)

I kept working on the others--they were adamant that TVA was unconstitutional, and they would never have anything to do with selling anything to such an outfit.

DR. CRAWFORD: But that position changed after the Eighteen Power Companies case, didn't it?

MR. KRUG: Yes, it changed immediately. But meanwhile this Congressional Inquiry came on. You are familiar with that, I assume.

DR. CRAWFORD: Yes, sir.

MR. KRUG: It took a tremendous amount of Lilienthal's time, and finally wore him out. He had to go to the hospital for a considerable period of time.

DR. CRAWFORD: What year was that?

MR. KRUG: That was the end of 1938, I believe, or the beginning of '39.

DR. CRAWFORD: What were your feelings during this investigation? Did you have to give testimony?

MR. KRUG: Yes. At that time Lilienthal could no longer give testimony. I had to take his place. I didn't quite feel that I had the background and experience that was needed, but I was the only one, and I did. I sat before this joint committee of the Senate and the House, I guess, for a period of eight or nine days. I guess that had been the longest time that they were there.

DR. CRAWFORD: Was that in Washington or Knoxville?

MR. KRUG: All of mine was in Washington, but it started in Knoxville.

But they moved it to Washington and by the time I testified it was all in Washington. About the conclusion of my time before that committee, the Supreme Court decided that TVA was constitutional. With Mr. Swidler I immediately went to New York and met with Mr. Wilkie and Mr. Paul Sawyer of Electric Bond and Share. Wilkie was with Commonwealth and Southern, and we

MR. KRUG: found that they had changed their minds about being willing to talk.
(Cont'd.)

It wasn't too long thereafter that we made the deals that I think made the TVA. I'm not taking credit for it. Hundreds of guys worked on it. But we bought out all the private utilities in the area that we thought we could serve, except extreme Eastern Tennessee, which, when I left the War Production Board we hadn't been able to reach. But the negotiations were underway, and I knew that they would work out. Because of those TVA got a complete integrated area of service without competition. For example, in Chattanooga when the Wilkie thing re-opened, it had spent a couple of million dollars on its own system. It wouldn't have taken many more millions before Chattanooga would have said, "We want no part of Mr. Wilkie." Then you would have had two power systems in Chattanooga, and the whole TVA concept would have blown up. Because, as you know, in utilities two companies can't serve the same area economically. It just isn't fair.

DR. CRAWFORD: What impression did you get of Mr. Wilkie in your negotiations with him?

MR. KRUG: I found him an extremely intelligent and astute fellow, and very well able to handle the affairs of Commonwealth and Southern. I also found him extremely honest in not lying about things. He didn't like TVA, and he would have preferred to have had the Supreme Court rub it out of existence, but when he found out it wasn't he realized that his days were numbered, and if he could get a fair price he would take it. We gave him a fair price, and he took it. It was probably the biggest bargain Tennessee ever got, because World War II came on about a week after the deal was made, and these properties about doubled in value.

DR. CRAWFORD: What was the nature of your testimony before the Congressional investigation? What did you feel that your aims were at the time?

MR. KRUG: Well, I can't really summarize that eight days of testimony in the period that we have to talk about it, but I had to establish one basic thing-- that the TVA power operations was honestly able to pay its own costs, that it was not being subsidized by the tax-payer and that the Tennessee region wasn't getting a tax-payer in New York and Chicago and elsewhere to pay for part of his power bill. And our testimony was aimed primarily at that point, and we would work up reams of figures to show that with the operation of the system as then planned and the rates that we were then charging, we could meet all of our costs and have enough left to pay back Uncle Sam for the power part of his investment. It turned out, as you know, that the power operations paid back not only the power, but up to that time were borrowing money every day for expansion. But part of the cost was flood control and navigation.

DR. CRAWFORD: Were you able to present all the testimony that you wished?

MR. KRUG: Yes, the committee was split between the Republicans and the Democrats, and I would say that they gave me complete leeway. The Republicans had two gentlemen who were well-turned by the private power companies with questions to ask, and they asked the questions religiously. But we had a good idea what they would be, and we had a chance in answering them to expand on the answer to include things that we wanted answered that they didn't want to ask. I hope you don't ever have to read the thousands of pages of testimony.

DR. CRAWFORD: Fourteen volumes, I believe.

MR. KRUG: If you ever do you will find out that even the Republicans on the committee at the end were pretty well persuaded that the power operation of TVA wasn't such a bad idea.

DR. CRAWFORD: Was Larry Fly of assistance to you in helping to prepare the testimony?

MR. KRUG: He was General Counsel then and very helpful, but Joseph Swidler was the principal lawyer who helped me directly and we had from time to time three or four others of the younger TVA lawyers helping. But we worked day and night for weeks to get this testimony prepared, and I think that stood out. I don't recall any case that they found anything fallacious in what we said.

DR. CRAWFORD: Did you feel that you were well-prepared for the hearing when it came up?

MR. KRUG: I would have felt better had I been from TVA from the beginning. All that I can say is that I prepared as well as I could from what I knew and what I could learn in the period that I had available. For example, in the initial days of the formulation of the TVA power rights the records were not very adequate, and I had to work back from what those rates would produce as against the cost we could incur, rather than to say, "These rates were based on these costs, and these costs have turned out to be right." Now, that isn't too easy to do, because while they were not too impolite as to ask, they might well have said, "What you're doing now is saying in retrospect that the rates they picked out of a goldfish bowl are going to be all right." I would rather that we had a basis at the start of projecting the cost in purposing the rates on those costs. But it didn't cost us too much trouble. I think that the committee realized that in the early days of TVA that they didn't have a lot of substantial cost information to go on. Somebody had to make a stab at it, and that's what they did.

DR. CRAWFORD: Did you feel that the members of the committee were generally friendly? Did you feel that any of them were hostile?

MR. KRUG: Two of them were very hostile at the beginning. They softened up toward the end. I prefer not to mention their names, but they were very dead-set against the TVA and they used the best facilities they had to think up every question that they could that might cause embarrassment.

DR. CRAWFORD: What were the major difficulties of TVA during your experience? Would it be the Lilienthal-Morgan disagreement, the investigation, and World War II? Or was that a problem to you?

MR. KRUG: Well, frankly, the Lilienthal-Morgan thing I didn't get involved in. That started before I arrived, and it was well along to a conclusion at that time. I stayed clear from it completely as much as I could. The major thing was, I think, organization, which I think I've mentioned; deciding on an area which we could serve; and the negotiations with the private power companies to get them to sell out. When the war was in the offing, I concentrated my efforts on getting TVA power prepared for it--for the war.

DR. CRAWFORD: When did you decide that?

MR. KRUG: Well, I had served on a government committee, since, I guess, 1939 or 1940, as an advisor on power. I was the public man, and they had a private power man, too. I was astounded by the amount of power that would be required if we really got into war.

DR. CRAWFORD: Did you anticipate early that the United States might get involved in war?

MR. KRUG: Oh, yes. I didn't have to anticipate it. I was told that. That is really one of the things that amazes me about this whole Pearl Harbor business. That if anyone working in defense or government didn't know that Pearl Harbor was likely, they must have been out of their minds. Because, Washington, starting in '39 and '40 was working day and night trying to get ready for an emergency of that kind. We didn't necessarily think it would

MR. KRUG: be Pearl Harbor, but we knew it might hit from both sides and we (Cont'd.) were going to have to do something about it.

DR. CRAWFORD: Who was responsible for that preparation?

MR. KRUG: You mean the top preparation?

MR. KRUG: I've forgotten who was the chairman of that particular group.

I think they kept it out of the government, and I think it was a group-- a committee--picked from industry. Dupont was one of the important facts; Hercules Powder another; an aluminum company another--those that would have to carry the brunt if war hit. The airplane manufacturers, air motor engine manufacturers. They set up this committee and called in people as to what planning would have to be done to be sure that we had what tanks, aircraft, and what-not that would be needed. Of course, when Franklin Roosevelt shocked them all with 50,000 planes a year and umpteen thousand tanks that was considerably above their sights.

DR. CRAWFORD: Was this committee under the Department of Defense?

MR. KRUG: It operated under an inter-agency department. A group from Defense was there. Initially it was the Office of Production Management, which is headed up by Bill Knutson of General Motors and Sidney Hillman of the A. F. of L.

DR. CRAWFORD: Do you remember who was in charge of it when you served with it first?

MR. KRUG: I don't remember the name of the man.

DR. CRAWFORD: What changes did you feel this would require in TVA?

MR. KRUG: I knew that TVA would need a lot of power, and that we could not get it from hydro alone. So we mapped out a plan of two dams we could build very promptly. They were Douglas and Cherokee right out of town here, and the Watts Bar steam plant. That was the initial bite. And, of course, that brought up the question for the first time of whether or not TVA should or could build steam plants.

DR. CRAWFORD: Did you bring that question up first?

MR. KRUG: Yes.

DR. CRAWFORD: What were your initial conclusions about steam plants?

MR. KRUG: Well, I knew from the beginning that we needed steam plants but what reaction there would be in Congress I wasn't at all certain of.

DR. CRAWFORD: Did you feel that water power had been developed about as far as economically possible?

MR. KRUG: No, but I felt that without steam in conjunction with future development we wouldn't have a balanced power system to get the maximum lot of the hydro and fill in with the steam, so when you had a lot of water you would be using the hydro more, and when the water was down you would be using the steam more. But as a total you had a firm power capacity which could probably double what you could probably get out of the hydro alone.

DR. CRAWFORD: Did you have difficulty convincing colleagues of this plan?

MR. KRUG: Yes, but not in the power department.

DR. CRAWFORD: What were the objections to it?

MR. KRUG: That it didn't fit in with the TVA basic program. We were developing water resources, and the steam power plants had no part in that.

DR. CRAWFORD: What caused the plan then to be accepted? Was it the coming of World War II?

MR. KRUG: Well, I think I was able to persuade Mr. Lilienthal that unless we did this we could not supply the power demands in this area in World War II. And I believe that by that time Dr. Arthur Morgan was out of the picture, and so Mr. Lilienthal and I went to Washington and persuaded the authorities that controlled that TVA should have this program.

MR. KRUG: Incidentally, I've forgotten the name of the old gentleman, but he (Cont'd.)

is one of the greatest consultants of the private power companies and most opposed to public power. We had to convince him, and we did. We got him to advocate this plan for adding steam plants along with this hydro.

DR. CRAWFORD: When did you convince Congress of this?

MR. KRUG: Oh, this must have been some time in 1941.

DR. CRAWFORD: Before Pearl Harbor?

MR. KRUG: Oh, yes. I left TVA long before Pearl Harbor. In June of 1941, I was more or less drafted by the Office of Production Management in Washington. After that I spent time with TVA only on consumating the plans for developing the Fontana Dam, which I had started before, and which I knew all about, and which I did out of our office in Washington of Production Management. I did not do any full-time work on TVA problems after that--June of 1941. I was on their payroll until I entered the Navy in the spring of 1944.

DR. CRAWFORD: What people did you work with most in Washington for TVA?

Before June of 1941, what congressmen were most helpful?

MR. KRUG: Well, I would hate to cite to any of them at this late date, but naturally as long as old Senator Norris was alive he would do anything for TVA. Most of the Southern senators would do anything, and did. Men like John Sparkman and Lister Hill and Jimmy Burns. I would say that we had almost unanimoussupport of the Southn senators and congressmen. Where we encountered difficulty was in the bunkers of the private power companies, which are in New England and across the middle-west of New Jersey to Pennsylvania, Ohio, Illinois, and Indiana. And on the West Coast, the Pacific Light, Gas, and Water Company.

DR. CRAWFORD: Did you have personal contact with Senator Norris?

MR. KRUG: Yes.

DR. CRAWFORD: Was he the most helpful of the Congressmen outside of the South?

MR. KRUG: It's been so long ago, that I really hate to say so, but it's my recollection that he was. By the time I got in this picture, Norris had been in it a long time, and he was well-along in age. But he was one of those men that was so really sold on the TVA that you didn't have to persuade him. You just had to ask him, and he would do it.

DR. CRAWFORD: Was there an effective working relationship between Senator Norris and David Lilienthal?

MR. KRUG: Yes. As a matter of fact, during that particular period most of the Congressional relations were handled by Mr. Lilienthal himself. It wasn't until he became ill that I had to get into that part of it.

DR. CRAWFORD: During the course of the investigation?

MR. KRUG: Yes.

DR. CRAWFORD: Who worked in your Washington office at that time?

MR. KRUG: Marguerite Owen did then, and I think she still works for TVA. She had to know more about that phase of TVA than anyone. She not only worked hard, but she's a very skillful lady.

DR. CRAWFORD: She is still in Washington. Did you spend much time in Washington?

MR. KRUG: I would say probably 20% of my time.

DR. CRAWFORD: And did you spend much time at the different construction sites?

MR. KRUG: Not too much with construction because that was not my department. That was under the Chief of Engineers--General Parker. I spent a good deal of time on the location of transmission lines, because they did come under my department. But I spent most of my time developing relations with TVA customers--industrial, city, and co-ops.

DR. CRAWFORD: Did you get to know the region well in the course of that work?

MR. KRUG: I should say quite well.

DR. CRAWFORD: Did you find it quite different from your native Wisconsin and northern states?

MR. KRUG: Yes, quite different. I would hate to have to characterize it, but the people down here were amazingly friendly and cooperative. One reason that I was reluctant to take a job in Kentucky was that I heard that if you were born north of the Mason-Dixon Line, you might as well be dead. But I found the people in Mississippi, Alabama, and Tennessee, Georgia, the Carolinas, and Kentucky most cooperative and very little of the cynicism and deviousness that I encountered in places like New York.

DR. CRAWFORD: Did you notice changes in the region for the better in the years that you were with TVA?

MR. KRUG: Oh, yes, definitely. When I first came down here you drove through parts of Tennessee and Alabama and Mississippi where you couldn't even see a light on after dark at night. When I left TVA in 1941, every darn city in this area was lighted up like a Christmas tree 365 days of the year. Their mode of living had changed. A number of appliances, a number of farms with electric power.

DR. CRAWFORD: Do you believe that development in the region has continued at a similar rate since 1941?

MR. KRUG: I really couldn't tell you that. Of course, we had that advantage in the earlier period of a completely new thing so that we got new companies to expand or build down there. Now that they have, they're probably not expanding at the rate of going from nothing to a ten million dollar plant.

MR. KRUG: But a number of companies like Alcoa have expanded tremendously (Cont'd.) since I first came down here. You have companies like Reynolds Metals, which I was assured couldn't make aluminum when I first sold them their electric power. One of their competitors said that it would look like swiss cheese. Monsanto, Union Carbide, etc.

DR. CRAWFORD: Do you believe that such plants would have located in this area without TVA?

MR. KRUG: Some of them would have, but not the ones that used a lot of power.

DR. CRAWFORD: You are confident, then, that TVA has been a factor in the economic development of the region?

MR. KRUG: Oh, I don't think there's even any question. As a matter of fact, among my Republican friends (who are not too numerous), I can't find a one that doesn't think that TVA has done wonders in developing this part of the country.

DR. CRAWFORD: Now that you are more familiar with Knoxville, do you think that the headquarters of TVA could have been better-located elsewhere?

MR. KRUG: I wouldn't want to say, and I really don't know. What I did, and I thought that I would really be run out of town, is that I moved the power headquarters to Chattanooga just before I left here. I didn't know at that time that I was going to leave. As a matter of fact, we bought the Wendell Wilkie properties which included a big office building in Chattanooga. We built three new floors on top of it, and rented to the Chattanooga Power Board two or three of the floors below it. Although they took over the building itself, as a part of the deal. That was a very wise deal in terms of power, because it put the power operations more or less in the center of the power systems. We put all of them together rather than to spread it between Knoxville

MR. KRUG: and Chattanooga. Whether the other departments should be elsewhere, (Con'td.)

I really don't know.

DR. CRAWFORD: Were you satisfied, generally, Mr. Krug, with the budget that you had to work with?

MR. KRUG: No, we were never satisfied. We had a million ideas that could have been cheaper and faster had we had the money. That's the one thing that I notice that Congress doesn't understand yet. If you're going to do something, you ought to do it in the most economical construction time in terms of cost. A dam, for example, can be built in two years. When you spread it over five it's going to cost you on the order of 30% more than on the short schedule, because you had the big organization and engineer overhead tied up there for five years rather than two. Cherokee and Douglas we built in less than two years apiece, and were infinitely cheaper per unit than dams that are being built now. I tried my best to persuade Congress to either authorize a dam and build it as you should, or don't authorize it at all.

But every Congressman wants a dam in his own baliwick, and he doesn't care how many years it takes or whether it costs fifty percent more or not. He just wants it. In our projects in TVA before the war (and I think from what I read in the papers since the war), work is spread out over a longer period than need be. When you consider the construction equipment for the engineering personnel and the cost of materials in process themselves over, say, a five-year period against two years, it's a fantastic amount.

DR. CRAWFORD: At the time that you left TVA, what were your thoughts about the future of it. Were you planning other projects at the time?

MR. KRUG: Oh, yes, we had a great many in mind. We actually had reports on a great many. I was not too enthusiastic about some of them, but as it turned out, almost all of them have been built and more that we hadn't even dreamed of then. How their economics show up I haven't studied.

MR. KRUG: But the Tennessee River system now is the only one that I know of in the world that is completely developed.

DR. CRAWFORD: What about the development of steam plants? Did you have a plan as to how many might be needed? Where they should be located?

MR. KRUG: Yes. We didn't have a specific plan as to where exactly they would be located, but we knew about where they should be located and we had mined the potential of power of various rain stages and what steam would be best to back up a reasonable amount of that to firm power. Do I make clear to you what I mean by "firm?"

DR. CRAWFORD: I think so, but would you explain it for the record?

MR. KRUG: Hydro plants. Let's take Wilson Dam as an example. That was the first one built down here by the government. At flood stage that could probably produce 300,000 kilowatts. That's when the river is running full. But the Tennessee, before it was regulated, would go down to a point where you would probably be lucky to generate 25,000. So you can't sell power that way. You've got to find some way to bridge the gap between the three hundred and the twenty-five. The way to do it is by having steam plants on hand so that when the water is often running good you can take the full advantage of it, and when it's down you can bridge the gap by fuel-generated plants.

DR. CRAWFORD: This occurred, I'm sure, after your leaving TVA, but when did the use of nuclear plants first develop?

MR. KRUG: That was after World War II. I'm not sure of the exact year. But we had not even dreamed of using nuclear power in our steam plants then. I did have a part in locating Oak Ridge, first at the time when I was with TVA when the idea was first conceived, and right after with W. P. B., because we had a sure, a continuous, supply of power. We had to put it in a location where it wouldn't blow up the whole countryside if it did blow up.

DR. CRAWFORD: Who was responsible for selecting the Oak Ridge location?

MR. KRUG: I've forgotten his name now. You must recall it. He was the engineer in charge of the whole project. I can check my files and let you know, but I think you'll find it out. He's a very famous general, and he later became the general who headed up the whole project.

DR. CRAWFORD: The Manhattan project?

MR. KRUG: The Manhattan project. And he sent down, oh, scores of engineers to this site as well as, I think, a dozen others around the country, and we directed them to this one. I mean "we," TVA did, because it was near our complex of power lines. I knew the country well, and I don't think there were more than a hundred people living in the entire area of Oak Ridge. I used to drive through frequently on my way from Norris Dam, where I lived, to Chattanooga, where I very frequently worked.

DR. CRAWFORD: You had become familiar, then, with the Oak Ridge area?

MR. KRUG: Oh, yes. That was a real wilderness in those days.

DR. CRAWFORD: What was your part in selecting the location?

MR. KRUG: Well, number 1, it had to do with power. Number 2, if we had the power, they wanted to know what part of Tennessee might be the best location and right off I recommended this area; although, there were a number of others that I could have thought of because it wasn't being used for anything. And it was so integrated with our own power facilities that I was pretty sure that they would have constant power supply. I think it finally ended up that we constructed five different lines into there, and they had a plant of their own. So the possibility of explosion was greatly minimized. But at that time they hadn't the remotest idea of what kind of an explosion could come from that operation.

DR. CRAWFORD: No one foresaw at that time, I suppose, that it might be used for power production itself later?

MR. KRUG: Yes, that scientifically had been explored, but at that time no one even knew it could be produced. In my time in TVA we thought that the time when that could be devoted to peace-time use was too remote to be included in our planning. As a matter of fact, there is still some question about to what degree it should be included in future planning.

DR. CRAWFORD: What part did you have in establishing rates for power?

MR. KRUG: Well, initially the basic wholesale rate of the TVA was established before I came down here, and I had nothing to do with it. It turned out during that period very well. They've had it changed recently four or five times, which I think is bad, but I had nothing to do with it.

DR. CRAWFORD: Did you make changes when you worked with TVA?

MR. KRUG: Not on that rate, but with the rates that we required the towns to follow. You see, under the TVA power contract, TVA agreed to sell the power at a certain rate, provided the town will re-sell it at a certain rate schedule. I worked out a number of changes in that in that period that I was there, and I suppose there have been many, many more since then. But the main idea was to be sure that the power would be sold at cost, not to be used as a tax-gathering means by the municipalities or other agencies that take the advantages of low TVA power and charge a high price and take the difference for graft or for tax advantage.

DR. CRAWFORD: Did you have satisfactory relations with the different municipalities with which you had to work?

MR. KRUG: Well, it started out pretty rough with some of them, but I think it ended up (at least from my point of view) very well with all of them. Initially we had a little difficulty in Nashville where the people weren't certain whether they wanted to go for public power or not. When the Board finally decided to go along on the Wendell Wilkie purchase, it straightened out. I'm not sure whether they changed the Board members or not, but I know that I travelled frequently until I had this operation on my legs, through the South, and I don't know any of the larger towns where they don't still remember me and treat me as a friend; Memphis in particular.

DR. CRAWFORD: What part did you have in the negotiations there, Mr. Krug?

MR. KRUG: Well, Joe Swidler and myself represented the TVA throughout that entire thing. Originally the Memphis (Do they call it the Power, Water, and Light Commission?) Whatever it was was headed up by Major Allen, and we had negotiations with the City. A gentleman by the name of Overton was Mayor. We worked out a deal which I thought was a very good one for TVA and the City that was all agreed to by the Board, by the Mayor, and by the TVA until Mr. Crump found out about it. It appeared that he had not been consulted by the City officials, so he immediately said, "The deal is off." And there wouldn't be any new one, unless he had something to say about it.

This was after months of work , and I thought it was a wonderful deal for the City, but that killed it for the time being. We concentrated on the Wendell Wilkie affair and Swidler and I met with the Electric Bond and Share people in New York during the Wilkie association and discussed with them whether they would be willing to reopen negotiations, if we could get them reopened. They were most doubtful that they wanted anything more to do with Memphis, but we finally got them to agree that if they could get assurance, if they could talk to somebody who was able to talk with

MR. KRUG: authority and agree with something with authority, that they
(Cont'd.)

would sit down again and try to talk about it. So Swidler and I went to Memphis and scheduled a meeting with Mr. Crump in his office, and we told him that we thought the deal was a good one, but if he had ideas that would improve it we thought that the power company might sit down with him and discuss it further. He said, "Well, what do you have in mind?" We outlined about what we had agreed to before. He laughed his head off, and then he brought in whoever was second-in-command in Memphis and told him the story about what we had told him, and they both laughed their heads off. They finally even got down to the Sheriff, who also laughed his head off. I finally got up and said, "Mr. Crump, if you don't want to make a deal on the matter, it's your own decision. We were just trying to be helpful and just trying to let you know that the door is open. If you really have someone that you will authorize to sit down and talk things over, but I'm not going to stay here any longer and be laughed at." So I got up and walked toward the door. He's a great big buy, about as big as I am. He got between me and the door and said, "Just a minute, Mr. Krug, just a minue!" I said, "Yes, sir?" He said, "You don't have to walk out the door, just come on back here and sit down." So Joe and I went back and sat down. He said, "We want to make a fair deal with these people. We want to get them out of Memphis, but I just didn't like the way it was done. If you will get the company to include the gas properties (which they had never mentioned before) as part of the deal, I'll authorize Major Allen and his Board to sit down and speak with authority." I said, "Well, I don't know if they'll give up the gas or not, but I should think they would. They're not very happy in Memphis. He said, "Well, if you can, call me in and I'll arrange a meeting immediately. So I called them and found out they wanted to get the hell out of Memphis. Then we arranged a new series of meetings that also

MR. KRUG: took another two or three months, but finally came up with a deal
(Cont'd.)

which was exactly the same thing on power, approximately, but they got the gas for an additional amount. I didn't think that they wanted to buy the gas, but I'm sure that Electric Bond and Share was glad to get rid of it! But it went through because Mr. Crump personally authorized the thing.

DR. CRAWFORD: Mr. Krug, could you give in outline form something about your activities since leaving TVA in June, 1941?

MR. KRUG: Yes. I'll try to make it as brief as possible. I joined the Office of Production Management, which later became the War Production Board, as Chief of the Utility Division. I had jurisdiction over all utilities in the United States. I held after that several other posts on the War Production Board. In 1944, I decided to join the military in active service, and so did and served for six months. I was recalled by President Franklin Roosevelt to become Chairman of the War Production Board after an absence of about six months. I served as Chairman for the duration of the War and a short period thereafter. I presided over the liquidation of the War Production Board in November of 1945 for, roughly, four or five months thereafter.

I established my own engineering consultant business. I had a great variety of clients.

DR. CRAWFORD: Did you do that in Washington?

MR. KRUG: All over the country, but my office was in Washington and in New York. Then along in March of 1946 I had a call from President Harry Truman asking me if I would come to the White House promptly, which I did. He asked whether I would accept the post of Secretary of the Interior. This was, of course, quite a surprise to me, because I had no political influences or anything of the kind. But he wanted me to do it, and I said I would. So I became Secretary of the Interior on March 18, 1946, and

MR. KRUG: continued in that capacity until December of 1949. Since that time (Cont'd.)

I have been back with my own consulting business and the various industries that we talked about before.

DR. CRAWFORD: Had you met President Truman prior to your appointment as Secretary of the Interior?

MR. KRUG: Yes. When I was first named Chairman of the War Production Board he was head of the Senate committee that investigated the war effort. The Chairman of the War Production Board was the usual Monday-morning witness as to what was going on and why not. That's when I met him frequently then. But then when Franklin Roosevelt died I was still Chairman of the War Production Board, and as such I served in a war-time cabinet, which, of course, at that time Truman had adopted. So I was in his cabinet from the time of Roosevelt's death in the spring of 1945, I believe it was, until I liquidated the War Production Board in November, 1945. So, he knew me well from sitting before his cabinet table and from sitting before his committee on the hill.

DR. CRAWFORD: What did you think of as your major accomplishments and responsibilities as Secretary of the Interior?

MR. KRUG: Now, you're not going to talk me into bragging, but one thing that other Secretaries had not before tried to do, and so far as I know have not since tried to do, was to integrate the Departments of the Interior--the separate departments and bureaus and what-not, into a going concern so that they would be working as a team and not as a bunch of antagonists in getting the affairs of the interior defined as against the agencies of the other government departments so that we did not have conflicts and over-laps. I concentrated a great deal of time on that, including going about the country, calling together the representatives of the Interior Department and of the other agencies in trying to find out what the problems were and what procedures

MR. KRUG: could be established to eliminate or minimize those conflicts.
(Cont'd.)

As a result of that work, inter-regional committees, as I think they are still called, were set-up, which included the principal bureaus of the interior, plus agriculture, plus army engineers, plus coast guard in some places, etc. to consider problems in all departments and to have some jurisdiction of responsibility for and to get them to "talk out" how they should be handled so that they wouldn't be having dog fights in the newspapers across the country.

You probably know that some of these were not simple. They were just born conflicts between, let's say, the Park Service and the Bureau of Reclamation. The Bureau wants to build dams and great big lakes and irrigate land, and the Park Service wants to preserve it in its natural way. The Fisheries Department was always in conflict with the Army of Engineers and the Bureau of Reclamation, who were damming up rivers so that the fish couldn't migrate for natural breeding. Quite often these debates got into newspapers and told more lies to everyone as to what it was all about.

In addition to that we tried to put in a program department within the Interior Department to map out just what the Department as a whole should do in the future. I might say this move was contested viciously in some circles in Congress because they didn't want any set program. They wanted to dictate their own programs and have them accepted. We also set up what we thought was a complete merit system of promotions. Frequently in the past top Interior people had been selected on patronage. I think that was entirely-- I won't say entirely--but I think mostly eliminated during the period that we worked at it. But one of the minor things that I had to do was that I took over the coal mines for a year as Coal Mines Administrator, notwithstanding Mr. John L. Lewis.

DR. CRAWFORD: What was your most personally satisfying work in government?

MR. KRUG: Well, it's hard to say. It's all been very satisfying to me, but I think that if I had to pick one I would say that the job I had to do in TVA was most exciting.

DR. CRAWFORD: What are your plans for the future at this point, Mr. Krug?

MR. KRUG: Well, I would like to reserve some time not too far away where I can take time away from ordinary operations and figuring how many tons of asphalt we are going to have to get in and how many of them to deliver and how much to pay a truck driver and so on and so on, to study over the records of the last forty years and trying to get in mind more clearly what I'm going to in the next period ahead and whatever projection there can be. I guess most of us go from one day to the other. I know that I have, and don't certainly understand what 1980, or certainly the year 2000 might mean.

DR. CRAWFORD: Thank you, Mr. Krug.

MR. KRUG: You're welcome.



